

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Mechanical Engineering - NOC:Theory of Composite Shells

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Co-ordinating Institute - IIT - Guwahati

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - Introduction to composite materials
- Lecture 2 - Basic terminology in Shell
- Lecture 3 - Derivation of fundamental theorem of surfaces
- Lecture 4 - Derivative of unit vectors and various theorems
- Lecture 5 - Classification of shells
- Lecture 6 - Derivation of strain-displacement relation
- Lecture 7 - Derivation of shell governing equations - 1
- Lecture 8 - Derivation of shell governing equations - 2
- Lecture 9 - Derivation of shell governing equations - 3
- Lecture 10 - Derivation of special cases
- Lecture 11 - Derivation of shell constitutive relations
- Lecture 12 - Solved examples on membrane theory and moment shell theory
- Lecture 13 - Shell of revolution problems
- Lecture 14 - Derivation of Navier solution for infinite shell panel
- Lecture 15 - Basics of MATLAB coding
- Lecture 16 - Derivation of Navier solution for finite shell panel
- Lecture 17 - ABAQUS Modelling
- Lecture 18 - Extended Kanatrovich method for shell panel
- Lecture 19 - Free Vibration solution of shell panels under Navier and Levy supports - 1
- Lecture 20 - Free Vibration solution of shell panels under Navier and Levy supports - 2
- Lecture 21 - Basics of Buckling of shells
- Lecture 22 - Buckling of cylindrical shells
- Lecture 23 - Buckling of Levy-type cylindrical shells
- Lecture 24 - 3D Bending
- Lecture 25 - 3D Free vibration
- Lecture 26 - 3D Buckling
- Lecture 27 - Advanced Material
- Lecture 28 - Free vibration of a composite cylindrical shell

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